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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/761,533 | 01/21/2004 | Rebecca A. Shipman | 59420US003 | 3283 |
| 32692 | 7590 | 03/07/2006 | EXAMINER | |
| 3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427 | | | | KHATRI, PRANAV V |
| | | ART UNIT | | PAPER NUMBER |
| | | 2872 | | |

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

| | | |
|------------------------------|--|------------------------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/761,533 Pranav V. Khatri <i>PK</i> | SHIPMAN ET AL. Art Unit 2872 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 21 January 2004.
2a) This action is FINAL. 2b) This action is non-final.
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-21 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) Claim(s) _____ is/are allowed.
6) Claim(s) 1-21 is/are rejected.
7) Claim(s) _____ is/are objected to.
8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
10) The drawing(s) filed on 21 January 2004 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 07/06/05 06/27/05 *01/05/05 and 01/21/04*

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) Notice of Informal Patent Application (PTO-152)
6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1- 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Sloot (US Patent Application Publication 2002/0186472).

Regarding claim 1, Sloot discloses a retroreflective element (see figure 2a, numeral 15) having an exposed outer surface (fig 2a) comprising optical elements (15 are prisms) and an interior cavity (inner area of cylinder).

Regarding claim 2, Sloot discloses wherein the exposed outer surface consists of the viewing surface of preformed retroreflective sheeting (see page 1 paragraph 0005 lines 1-2, and page 3 paragraph 0044 lines 1-5, and Abstract lines 10-13).

Regarding claim 3, Sloot discloses wherein the retroreflective sheeting is selected from the group comprising exposed-lens sheeting and enclosed-lens sheeting (see page 1 paragraph 0005 lines 1-2, 0003 lines 1-4, the mold 10 is interpreted to be the exposed lens sheeting).

Regarding claim 4, Sloot discloses wherein the retroreflective sheeting is exposed-lens sheeting comprising a specular reflective coating spaced apart from a monolayer of optical elements (page 1 paragraph 0006, lines 3-6).

Regarding claim 5, Sloot discloses wherein the optical elements comprise glass microspheres, glass-ceramic microspheres, cube corner elements (page 1 paragraph 0009, page 3 paragraph 0045), and combinations thereof.

Regarding claim 6, Sloot discloses wherein the optical elements are at least partially embedded in a polymeric layer (see paragraph 0004, cube corner elements are pressed on a vinyl polyester which is interpreted to be a polymeric layer).

Regarding claim 7, Sloot discloses wherein the optical elements are selected from transparent microspheres, colored transparent microspheres (see page 1 paragraph 0009, the retroreflective elements are formed with a die and have different retroreflective shapes as well), and microspheres having a specular reflecting coating (see Page 1, paragraph 0006).

Regarding claim 8, Sloot discloses wherein the cavity is discontinuous (in figure 2a, the 25 area is the discontinuous area).

Claims 11-13 and 16-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Rega et al. (US Patent No. 6,054,208).

Regarding claim 11, Rega et al. discloses a retroreflective element (see Rega et al. Fig 3) having an exposed outer surface (37) comprising optical elements (36) and a discreet interior layer (32) comprising optical elements (31).

Regarding claim 12, Rega et al. discloses a surface comprising a plurality of the retroreflective elements of claim 11 partially embedded in a binder (Col 19 lines 58-63).

Regarding claim 13, Rega et al. discloses wherein the optical elements are provided by retroreflective sheeting (Col 19, lines 58-63).

Regarding claim 16, Rega et al. discloses a method of making retroreflective elements comprising: providing an elongated member (cover sheet) having a lengthwise surface (fig 3); and bonding retroreflective sheeting about the elongated member such that the lengthwise surface is substantially covered with the major viewing surface of the sheeting (Col 19 line 49 – Col 20 line 47, the retroreflective elements are hermetically sealed and to adhere the base sheet to the cover sheet).

Regarding claim 17, Rega et al. discloses the method of claim 16 wherein the elongated member is a core material (Col 20 lines 21-47).

Regarding claim 18, Rega et al. discloses wherein the core material is a filament, a polymeric material, and combinations thereof (Col 20 lines 21-47).

Regarding claim 19, Rega et al. discloses the method of claim 16 wherein the elongated member is a tool (Col 20 lines 10-47).

Regarding claim 20, Rega et al. discloses the method of claim 16 wherein the retroreflective sheeting overlaps with itself (Col 20 lines 10-47).

Regarding claim 21, Rega et al. discloses the method of claim 16 further comprising cutting in a direction normal to the lengthwise surface forming discreet elements (Col 20 lines 21-47).

Claims 14 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Hedblom et al. (US Patent No. 6,479,132).

Regarding claim 14, Hedblom et al. discloses a pavement marking comprising retroreflective elements partially embedded in a binder wherein the coefficient of

retroreflected luminance is at least 2000 mcd/m²/lux when dry (see Hedblom et al. Col 21, example 21, the fast water drainage at DRY is 2000 mcd/m²/lux).

Regarding claim 15, Hedblom et al. discloses a pavement marking comprising retroreflective elements partially embedded in a binder wherein the coefficient of retroreflected luminance is at least 1500 mcd/m²/lux when wet (see Hedblom et al. Col 21, example 63, the fast water drainage at RAIN is 1500 mcd/m²/lux).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sloot (US Patent Application Publication 2002/0186472) in view of Rega et al. (US Patent No. 6,054,208).

Regarding claims 9 and 10, Sloot discloses the claimed invention as set forth above except does not explicitly teach wherein a retroreflective article or a surface comprising a plurality of the retroreflective elements of claim 1 at least partially embedded in a binder.

However, Rega et al. teaches retroreflective elements are at least partially embedded in a binder (Col 19 lines 58-63).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Sloot to include retroreflective elements partially embedded in a binder such as Rega et al. for the purpose of when light enters the element the light is refracted to fall on a reflective pigment and the amount of light gathered is dependent on a low index of refraction air interface on the exposed portion of the element.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pranav V. Khatri whose telephone number is 571-272-8311. The examiner can normally be reached on M-F, 8:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Pranav Khatri
Examiner, 03/03/2006



DREW A. DUNN
SUPERVISORY PATENT EXAMINER